



Subject
1-String LED Demo Board Manual

Board Model: LDB40V0.5A1L_3351FT.00
 Doc. No.: OB_DOC_DBM_3351FT00

Description:

The performance of LED backlight power supply for LED backlight application is presented. It is designed with OB3351FT, integrated LED dimming MOSFET. The detailed block diagram, schematic, BOM, PCB layout and test data are also described.

The test data in this report is by 12 Series 1 Parallel White LED array.

Revision History

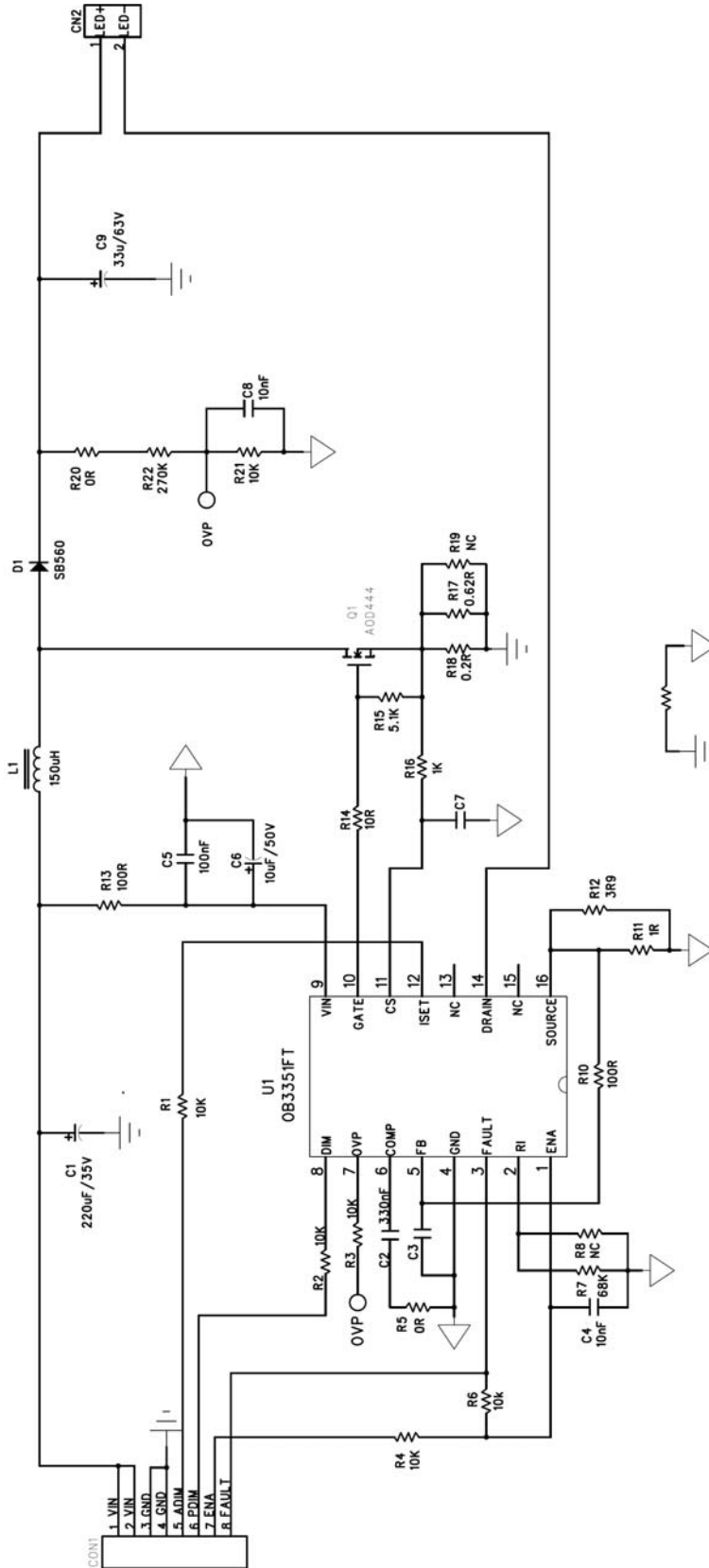
Revise Date	Version	Reason/Issue
2014-10-29	00	First Issue

1. Board Information

1.1. Features

- 9V to 35V input Voltage Range
- Integrated LED dimming MOSFET
- Current mode PWM Controller with good dynamic response
- Reference voltage setting through PWM Duty cycle
- Output over voltage protection, cycle by cycle Over Current Protection, VDD under voltage lockout
- Diode & Inductor & LED short Protection, LED Cathode short GND Protection
- Power MOS G/D short Protection
- Burst dimming with PWM input
- Wide dimming range from 1% to 100%
- Fault status output(CS high & CMP high & OTP & OVP & MOS G/D short)

1.2. Electrical Schematic



VIN: 10.8-13.2V Output LED Parameter: 40V/500mA;
 PDIM: 200Hz, 10%, Min. Brightness; 100%, Max. Brightness
 ADIM: 20KHz, 30%, Min. FB Reference; 100%, Max. FB Reference
 ENA: Disable, 0-0.8V; Enable, 2-5V

2. Test Data & Waveform

2.1. Test Data Summary

2.1.1. Key Item Overview

Item	Symbol	Test result			Spec	Unit	Remark
		LED					
LED Current	I_{OUT}	484.2			475~525	mA	Pass
LED Array voltage	V_P	40.2			-	V	--
	L1 (Core)	Q1	D1	Spec	Remark		
Thermal	68	55	58	<75°C	Pass		
	V_{IN} (V)	I_{IN}(A)	P_{IN}(W)	P_{OUT}(W)	Efficiency	Spec	Remark
Efficiency	12.03	1.77	21.29	19.46	91.41	>85%	Pass

Note: $V_{IN}=12V$, under 25°C ambient with 12S1P white LED array.

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